DETAILED ACTION

Response to Amendment

1.   This communication is in response to the Amendment filed 21 March 2008.

2.   Claims 1-18 are pending. In the Amendment filed 21 March 2008, none of the

claims were amended. In the Examiners Amendment made 17 June 2008, permission

to amend claim 10 was granted.

3.   After a thorough search and examination of the present application and in light of

the prior art made of record, Applicant's Amendments and Remarks filed 19 September

2007, the Terminal Disclaimer filed 21 March 2008 and the Examiner's Amendment

made on 17 June 2008, claims 1-18 are allowed.

Examiner Amendment

4.   Authorization for this examiner's amendment, listed below, was given in a

telephone interview with Donald Muirhead (Reg. No. 33,978) on 17 June 2008.

5.   Please amend the specification as follows:

On page 102, after line 2, please add the following text:

    The system described herein may be provided using software stored in a

computer-readable storage medium.

6.   Please amend claim 10 as follows:

10. (Currently Amended) Computer software[[, provided in]] <u>stored on</u> a

computer-readable storage medium, that restores data to a first storage area of a first

type that contains sections of data from a second storage area of a second type that is

a virtual storage area that has, for each section of data thereof, at least one of: a pointer

to a corresponding section of data of the first storage area and a pointer to

corresponding section of data of a third storage area of the first type where there is at

least one other storage area of the second type, the software comprising:

      executable code that, prior to writing new data to a section of the first storage

area pointed to by a pointer of the second storage area, copies data of the section of

the first storage area to a section of the third storage area and adjusts the pointer of the

second storage area to point to the section of the third storage area;

      executable code that iterates through each section of the second storage area;

and

      executable code that provides to a corresponding section of the first storage area

an indirect pointer to a corresponding section of the third storage area if no storage

areas of the at least one other storage area point to the corresponding section of the

first storage area.

Terminal Disclaimer

7.   The terminal disclaimer filed on 21 March 2008 has been approved on 21 April

2008.

Double Patenting

8.   The rejection of claims 1 and 10 on the ground of nonstatutory obviousness-type double patenting has been withdrawn as necessitated by the filing of the Terminal Disclaimer.

35 USC § 101 - Clarifications

9.   Claims 10-18 are directed towards computer software stored on a computer-readable storage medium. The examiner interprets the term "computer-readable storage medium" as excluding transmission media, signals, or any form of energy, such that the claim clearly falls within a statutory class of invention as required under the terms of 35 U.S.C. 101.

Reasons for Allowance

10.   The following is a statement of reasons for the indication of allowable subject matter:

In the Examiner's Non-Final Office Action dated 18 June 2007, claims 1-18 were rejected under 35 USC 103 based primarily on the article "File System Design for an NFS File Server" by Hitz; US Patent No 5,819,292 to Hitz et al; the article "A Persistent Snapshot Device Driver for Linux" by Siddha; and the background of US Patent 6,460,054 to Grummon.

The claimed invention is directed towards restoring data. The restoration is

implemented with two storage devices (1st and 3rd) of a first type and two virtual storage

devices (2nd and 4th) of a second type. After data is copied from the 1st device to the

3rd, the pointer at the 2nd is altered to point at the 3rd instead of the 1st.

The prior art of record, the article "File System Design for an NFS File Server" by

Hitz, US Patent No 5,819,292 to Hitz et al, the article "A Persistent Snapshot Device

Driver for Linux" by Siddha and the background of US Patent 6,460,054 to Grummon,

do not show, teach or suggest the feature where, **in response to a write to a section**

of the stored data pointed to by a pointer of the table of the virtual storage area,

data is copied from the storage data to a section of another storage area prior to

the write and the pointer is caused to point to the other storage area. Hitz

discloses that, when data is written to the file system, the data is copied to a new

location (e.g., copied from the old block 1818 to the new block 1824 in Figure 18C) and

the device to which the write occurred is made to point to the new data block 1824.

Thus, unlike Applicants' claimed invention where the virtual device points to the moved

old data, Hitz teaches the opposite where the original device to which the write is being

made points to a different block that is allocated.

An updated search for prior art on the EAST database and on domains (NPL-

ACM, Google, IEEE) has been conducted. The prior art searched and investigated in

the database and domains does not fairly teach or suggest the teaching of the claimed

subject matter as described above and reflected by the combined elements in each of

the independent claims 1 and 10.

The dependent claims 2-9 and 11-18 depending on independent claims 1 and 10 respectively, are also distinct from the prior art for the same reason.

11.   As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KIMBERLY LOVEL whose telephone number is (571)272-2750. The examiner can normally be reached on 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John R. Cottingham/   Kimberly Lovel
Supervisory Patent Examiner, Art Unit 2167   Examiner
                                                       Art Unit 2167

18 June 2008
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